

REMARKS

In the last Office Action, the Examiner objected to claim 17 as containing an informality. Claims 3 and 4 were objected to under 37 C.F.R. §1.75 as reciting substantially duplicate subject matter. Claims 3, 4, 7 and 8 were rejected under 35 U.S.C. §112, second paragraph, for indefiniteness. Claims 13-20 were rejected under 35 U.S.C. §102(b) as being anticipated by applicants' prior art disclosure in Figs. 24-33 as published in U.S. Patent Publication No. 2004/0130970 (APD). Claims 1-12 were rejected under 35 U.S.C. §103(a) as being unpatentable over APD in view of U.S. Patent No. 5,903,519 to Takahashi et al. ("Takahashi"). Additional art was cited of interest.

In accordance with the present response, page 58 of the specification has been suitably revised to provide literal antecedence for the amended claim language. The previously submitted abstract has been suitably revised to more clearly reflect the invention to which the amended claims are directed.

Independent claims 1 and 13 have been amended to further patentably distinguish from the prior art of record. More specifically, independent claim 1 has been amended to incorporate the subject matter of claim 5 and intervening claim 11. Independent claim 13 has been amended to further

define the structure and the positional relationship between the first, second and third setting portions of the date indicator setting portion. As set forth in detail below, the prior art of record does not disclose or suggest the structural combination of amended independent claims 1 and 13.

Claims 3 and 4 have been amended to overcome the rejection under 35 U.S.C. §112, second paragraph. Claim 17 has been amended to overcome the objection raised by the Examiner. Claim 4 has been further amended to depend on claim 2 to overcome the objection under 37 C.F.R. §1.175. Claims 2 and 3 have been further amended to depend on claim 1 in light of the amendment to independent claim 1. Claims 5-8 and 11 have been canceled. New claims 21-25 have been added to provide a fuller scope of coverage.

In view of the foregoing, applicants respectfully submit that the objection to claim 17, objection to claims 3-4 under 37 C.F.R. §1.75, and rejection of claims 3, 4, 7 and 8 under 35 U.S.C. §112, second paragraph, have been overcome and should be withdrawn.

Applicants request reconsideration of their application in light of the following discussion.

BRIEF SUMMARY OF INVENTION

The present invention is directed to a calendar timepiece.

The specification (pages 1-12) discloses conventional calendar timepieces. As described in the specification, the conventional calendar timepieces have not been able to accurately allow rotation of a date indicator for indicating date information. Furthermore, the conventional calendar timepieces have a complicated construction requiring a large number of parts resulting in costly fabrication and assembly.

The present invention overcomes the drawbacks of the conventional art. Figs. 1-23 show a calendar timepiece according to the present invention embodied in the claims. The calendar timepiece has a main plate 102, a minute indicator 324 mounted on the main plate 102 for undergoing rotational movement to indicate time information, and a correcting apparatus for correcting the time information. A dial 104 displays the time information. A date indicator 720 is mounted on the main plate 102 for undergoing rotation to indicate date information. The date indicator 720 has an inner teeth portion 720a comprised of a plurality of teeth. A date indicator driving wheel 706 is mounted on the main plate 102 to undergo rotation for rotating the date indicator 720. A date indicator driving finger 730 is integrally connected to the date indicator driving wheel 706 for rotation therewith. The date indicator driving finger 730 has a central portion

731 integral with the date indicator driving wheel 706, a spring portion 732 extending from the central portion 731, and a date indicator feeding portion 733 disposed at a front end of the spring portion 732 for rotating the date indicator 720.

A date jumper 740 is disposed on a side of the main plate 102 and has a train wheel comprised of a date indicator setting portion 742 for controlling rotation of the date indicator 720 by engagement with the inner teeth portion 720a of the date indicator 720. The date indicator setting portion 742 has a first setting portion 742a, a second setting portion 742b, and a third setting portion 742c. The second setting portion 742b is disposed between the first setting portion 742a and the third setting portion 742c so that when the date indicator setting portion 742 controls the rotation of the date indicator 720, the first setting portion 742a is brought into contact with a tip of a first tooth 720f of the inner teeth portion 720a of the date indicator 720 and the third setting portion 742c is brought into contact with a tip of a second tooth 720g of the inner teeth portion of the date indicator 720 contiguous with the first tooth 720f. The tip of each of the first tooth 720f and the second tooth 720g of the inner teeth portion 720a of the date indicator 720 has a portion shaped in the form of a circular arc with which the first setting portion 742a and the third setting portion 742c

are respectively brought into contact when the date indicator setting portion 742 controls the rotation of the date indicator 720.

According to the present invention, when a first reference line is defined by a straight line 770 connecting a rotational center of the date indicator 720 and a center of the circular arc of the tooth tip of the first tooth 720f, a second reference line is defined by a straight line 771 connecting a rotational center of the minute indicator 324 and a center of the circular arc of the tooth tip of the second tooth 720g, T_1 represents an angle formed by the first reference line and the second reference line, T_2 represents an angle formed by a straight line 772 connecting an intersection of the first setting portion 742a and the second setting portion 742b and the rotational center of the minute indicator 324 and the first reference line, and T_3 represents an angle formed by a straight line 773 connecting an intersection of the second setting portion 742b and the third setting portion 742c and the rotational center of the date indicator 720 and the first reference line. In a preferred embodiment, $(T_1 - T_3)$ is less than $(T_3 - T_2)$ and $(T_3 - T_2)$ is less than T_2 .

By the foregoing construction, the calendar timepiece according to the present invention is capable of controlling rotation of a date indicator with higher accuracy

and efficiency as compared to the conventional art.
Furthermore, the calendar timepiece of the present invention has a simple construction and is economical to manufacture.

Traversal of Prior Art Rejections

Rejection Under 35 U.S.C. §102(b)

Claims 13-20 were rejected under 35 U.S.C. §102(b) as being anticipated by APD. Applicants respectfully traverse this rejection and submit that amended independent claim 13 and dependent claims 14-20 recite subject matter which is not identically disclosed or described in APD.

Amended independent claim 13 is directed to a calendar timepiece and requires a main plate, a time indicator mounted on the main plate for undergoing rotational movement to indicate time information, and a date indicator mounted for undergoing rotation to indicate date information, the date indicator having an inner teeth portion comprised of a plurality of teeth. Claim 13 further requires a date indicator driving wheel mounted on the main plate for undergoing rotation, a date indicator driving finger integral with the date indicator driving wheel for rotation therewith for rotationally driving the date indicator, and a date jumper disposed on the main plate and having a train wheel comprised of a date indicator setting portion for controlling rotation

of the date indicator by engagement with the inner teeth portion of the date indicator, the date indicator setting portion having a first setting portion for contacting a tip of a first tooth of the inner teeth portion of the date indicator, a second setting portion, and a third setting portion for contacting a tip of a second tooth of the inner teeth portion of the date indicator, each of the first, second, and third setting portions having a generally linear surface disposed at an angle relative one another. No corresponding structural combination is disclosed or described by APD.

APD discloses a calendar timepiece as described on pages 1-12 of the specification and shown in Figs. 24-33. The calendar timepiece of APD has all of the structure recited in amended claim 13 except for the structure and function of the date jumper. More specifically, as shown in Fig. 29 of APD, a date jumper 940 has a base portion 941, a date indicator setting portion 942, and a date jumper spring portion 944 (spec. pg. 4, lines 6-10). The date indicator setting portion 942 controls rotation of a date indicator 920 and has a first setting portion 942a and a second setting portion 942b (spec. pg. 5, lines 18-20) for contacting teeth 920f, 920g of inner teeth portion 920a of the date indicator 920.

Thus in APD, the date indicator setting portion 942 has only two setting portions for controlling rotation of the date indicator 920. In contrast, claim 13 requires a date indicator setting portion having three setting portions for controlling rotation of the date indicator. This structural difference between the date indicator setting portions of APD and claim 13 can be clearly seen by comparing Fig. 29 of APD with Figs. 13, 14 and 18 showing an embodiment of the calendar timepiece according to the present invention. In Fig. 29 of APD, the only two setting portions (i.e., the first and second setting portions 942a, 942b) of the date indicator setting portion 942 extend from the date jumper spring portion 944 and contact teeth 920f, 920g of inner teeth portion 920a of the date indicator 920 during rotation of the date indicator 920. Figs. 13, 14 and 18 corresponding to the calendar timepiece of the present invention embodied in claim 13, however, clearly show the three setting portions 742a, 742b and 742c of the date indicator setting portion 742 which contact teeth 720f, 720g of the teeth portion 720a.

Nevertheless, in order to expedite prosecution, claim 13 has been amended to further define the setting portions of the date indicator setting portion by reciting that each of the first, second, and third setting portions has a generally linear surface disposed at an angle relative one

another. No corresponding structural combination is disclosed or described by APD. For example, as shown in Fig. 29 of APD, the date indicator setting portion 940 has only two setting portions 942a, 942b, as discussed above, and only the setting portion 942b appears to have a generally linear surface (i.e., the setting portion 942a has a generally curved surface).

In the absence of the foregoing disclosure recited in amended independent claim 13, anticipation cannot be found. See, e.g., W.L. Gore & Associates v. Garlock, Inc., 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984) ("Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration"); Continental Can Co. USA v. Monsanto Co., 20 USPQ2d 1746, 1748 (Fed. Cir. 1991) ("When more than one reference is required to establish unpatentability of the claimed invention anticipation under § 102 can not be found."); Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 221 USPQ 481, 485 (Fed. Cir. 1984) (emphasis added) ("Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim").

Stated otherwise, there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the

invention. This standard is clearly not satisfied by APD for the reasons stated above. Furthermore, APD does not suggest the claimed subject matter and, therefore, would not have motivated one skilled in the art to modify APD's calendar timepiece to arrive at the claimed invention.

Claims 14-20 depend on and contain all of the limitations of amended independent claim 13 and, therefore, distinguish from APD at least in the same manner as claim 13.

In view of the foregoing, applicants respectfully request that the rejection of claims 13-20 under 35 U.S.C. §102(b) as being anticipated by APD be withdrawn.

Rejection Under 35 U.S.C. §103(a)

Claims 1-4, 9, 10 and 12 were rejected under 35 U.S.C. §103(a) as being unpatentable over APD in view of Takahashi. Applicants respectfully traverse this rejection and submit that the combined teachings of APD and Takahashi do not disclose or suggest the subject matter recited in amended independent claim 1 and dependent claims 2-4, 9, 10 and 12.

Independent claim 1 is directed to a calendar timepiece and requires a main plate, a minute indicator mounted on the main plate for undergoing rotational movement to indicate time information, a correcting apparatus for correcting the time information, a dial for displaying the time information, and a date indicator mounted on the main

plate for undergoing rotation to indicate date information, the date indicator having an inner teeth portion comprised of a plurality of teeth. Claim 1 further requires a date indicator driving wheel mounted on the main plate to undergo rotation for rotating the date indicator, and a date indicator driving finger integrally connected to the date indicator driving wheel for rotation therewith, the date indicator driving finger having a central portion integral with the date indicator driving wheel, a spring portion extending from the central portion, and a date indicator feeding portion disposed at a front end of the spring portion for rotating the date indicator. Claim 1 further requires a date jumper disposed on a side of the main plate and having a train wheel comprised of a date indicator setting portion for controlling rotation of the date indicator by engagement with the inner teeth portion of the date indicator, the date indicator setting portion having a first setting portion, a second setting portion and a third setting portion, the second setting portion being disposed between the first setting portion and the third setting portion so that when the date indicator setting portion controls the rotation of the date indicator, the first setting portion is brought into contact with a tip of a first tooth of the inner teeth portion of the date indicator and the third setting portion is brought into contact with a tip of a

second tooth of the inner teeth portion of the date indicator contiguous with the first tooth.

Amended claim 1 further requires that the tip of each of the first tooth and the second tooth of the inner teeth portion of the date indicator has a portion shaped in the form of a circular arc with which the first setting portion and the third setting portion are respectively brought into contact when the date indicator setting portion controls the rotation of the date indicator. Amended claim 1 further requires that when a first reference line is defined by a straight line connecting a rotational center of the date indicator and a center of the circular arc of the tooth tip of the first tooth, a second reference line is defined by a straight line connecting a rotational center of the minute indicator and a center of the circular arc of the tooth tip of the second tooth, T_1 represents an angle formed by the first reference line and the second reference line, T_2 represents an angle formed by a straight line connecting an intersection of the first setting portion and the second setting portion and the rotational center of the minute indicator and the first reference line, and T_3 represents an angle formed by a straight line connecting an intersection of the second setting portion and the third setting portion and the rotational center of the date indicator and the first reference line.

Amended claim 1 further requires that $(T1-T3)$ is less than $(T3-T2)$ and $(T3-T2)$ is less than $T2$.

Applicants respectfully submit that the combined teachings of APD and Takahashi do not disclose or suggest the structural and functional combination of the calendar timepiece recited in amended independent claim 1.

APD discloses a calendar timepiece as set forth in the specification and reiterated herein. APD does not disclose or suggest a date jumper comprised of a date indicator setting portion for controlling rotation of the date indicator by engagement with the inner teeth portion of the date indicator, the date indicator setting portion having a first setting portion, a second setting portion and a third setting portion, as recited in claim 1, as set forth above for the rejection of claim 13 under 35 U.S.C. §102(b).

Moreover, APD does not disclose or suggest the specific angular relationships between the first, second and third setting portions of the date indicator setting portion (i.e., $(T1-T3)$ is less than $(T3-T2)$ and $(T3-T2)$ is less than $T2$), as recited in amended claim 1.

The secondary reference to Takahashi has been cited by the Examiner for its disclosure of a minute indicator. However, Takahashi does not disclose or suggest the structural combination of the calendar timepiece recited in amended

independent claim 1, including the three setting portions of the date indicator setting portion of the date jumper and the the specific angular relationships between the first, second and third setting portions of the date indicator setting portion. Since Takahashi does not disclose or suggest these structural features, it does not cure the deficiencies of APD. Accordingly, one ordinarily skilled in the art would not have been led to modify the references to attain the claimed subject matter.

Claims 2-4, 9, 10 and 12 depend on and contain all of the limitations of amended independent claim 1 and, therefore, distinguish from the combined teachings of APD and Takahashi at least in the same manner as claim 1.

Moreover, there are separate grounds for patentability of dependent claims 3-4 which include the additional limitation that the first setting portion and the second setting portion of the date indicator setting portion of the date jumper are disposed at an angle in the range of 115 degrees through 160 degrees, and that the second setting portion and the third setting portion of the date indicator setting portion of the date jumper are disposed at an angle in the range of 120 degrees through 170 degrees. No corresponding angular relationships are disclosed or suggested by the prior art of record.

In view of the foregoing, applicants respectfully request that the rejection of claims 1-4, 9, 10 and 12 under 35 U.S.C. §103(a) as being unpatentable over APD in view of Takahashi be withdrawn.

Applicants respectfully submit that new claims 21-25 also patentably distinguish from the prior art of record.

Claims 21-23 depend on and contain all of the limitations of amended independent claim 13 and, therefore, distinguish from the references at least in the same manner as claim 13.

Moreover, there are separate grounds for patentability for dependent claims 22 and 23 which are directed to specific angular relationships between the first, second and third setting portions of the date indicator setting portion. Again, no corresponding angular relationships are disclosed or suggested by the prior art of record.

New independent claim 24 is directed to a calendar timepiece and requires a date jumper comprising a date indicator setting portion having a first setting portion for contacting a tip of a first tooth of the inner teeth portion of the date indicator, a second setting portion, and a third setting portion for contacting a tip of a second tooth of the inner teeth portion of the date indicator, the first setting

portion and the second setting portion of the date indicator setting portion of the date jumper being disposed at an angle in the range of 115 degrees through 160 degrees, and the second setting portion and the third setting portion of the date indicator setting portion of the date jumper being disposed at an angle in the range of 120 degrees through 170 degrees. Again, no corresponding angular relationships are disclosed or suggested by the prior art of record.

New claims 25-26 depend on and contain all of the limitations of independent claim 24 and, therefore, distinguish from the prior art of record at least in the same manner as claim 24.

Moreover, there is a separate ground for patentability for dependent claim 26 which is directed to the specific angular relationships between the first, second and third setting portions of the date indicator setting portion (i.e., $(T1-T3)$ is less than $(T3-T2)$ and $(T3-T2)$ is less than $T2$). Again, no corresponding angular relationships are disclosed or suggested by the prior art of record.

In view of the foregoing amendments and discussion,
the application is believed to be in allowable form.
Accordingly, favorable reconsideration and allowance of the
claims are most respectfully requested.

Respectfully submitted,

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